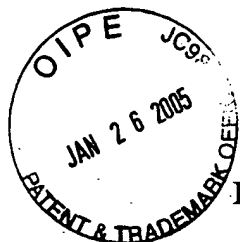


09/388509

CofC



Docket No.: S1905.0086
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:
Yasushi Maruta et al.

Patent No.: 6,792,033

Issued: September 14, 2004

For: ARRAY ANTENNA RECEPTION
APPARATUS

**REQUEST FOR CERTIFICATE OF CORRECTION
PURSUANT TO 37 CFR 1.322**

MS Post Issue
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**Certificate
FEB 01 2005
of Correction**

Dear Sir:

Upon reviewing the above-identified patent, Patentees note a typographical error which should be corrected.

On the face of the Patent:

Please add the references submitted in the Information Disclosure Statement filed on April 26, 2001. Reference is also made to our Request for Supplemental Notice of Allowance (copy enclosed) filed on May 14, 2004, requesting the acknowledgement of the references submitted in the Information Disclosure Statement dated April 26, 2001.

FEB 1 2005

Patent No.: 6,792,033

Docket No.: S1905.0086

Transmitted herewith is a proposed Certificate of Correction effecting such amendment. Patentees respectfully solicit the granting of the requested Certificate of Correction.

Dated: January 24, 2005

Respectfully submitted,

By Edward A. Meilman
Edward A. Meilman

Registration No.: 24,735
DICKSTEIN SHAPIRO MORIN &
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New York, New York 10036-2714
(212) 835-1400
Attorney for Applicant

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 6,792,033
DATED : September 14, 2004
INVENTOR(S) : Yasushi Maruta et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the face of the Patent , under FOREIGN PATENT DOCUMENTS:**Please add:**

JP 10-173580, 06/1998

JP 97-20400, 06/1997

JP 5-41607, 02/1993

JP 10-126138, 05/1998

JP 7-231286, 08/1995

JP 11-298388, 10/1999

JP 11-298345, 10/1999

MAILING ADDRESS OF SENDER:

Edward A. Meilman

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP

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41st Floor

New York, New York 10036-2714

PATENT NO. 6,792,033

No. of additional copies 1

1 FEB 2005

✓
Atty Docket No.: S1905.0086/P086

Inventor: Yasushi Maruta et al.

Application No.: 09/388,509-Conf. #4093 Filing Date: September 2, 1999

Title: ARRAY ANTENNA RECEPTION APPARATUS

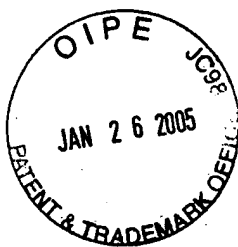
Documents Filed:

Request for Supplemental Notice of Allowance (2 pages)

Copy of Information Disclosure Statement dated April 26, 2001

Copy of postcard indicating receipt by the U.S. Patent Office of IDS dated April 26, 2001

Copy of Japanese Office Action dated March 6, 2001 (and English translation of relevant portion)

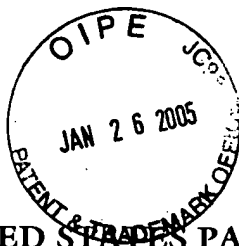


Via: HAND DELIVERY

Sender's Initials: EAM/cmf

Date: May 14, 2004

7.2.



Docket No.: S1905.0086/P086
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Yasushi Maruta et al.

Allowed: March 8, 2004

Application No.: 09/388,509

Confirmation No.: 4093

Filed: September 2, 1999

Art Unit: 2631

For: ARRAY ANTENNA RECEPTION
APPARATUS

Examiner: D. N. Vo

REQUEST FOR SUPPLEMENTAL NOTICE OF ALLOWANCE

Attn: MS Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants received a Notice of Allowance dated March 8, 2004.

On April 26, 2001, Applicants filed an Information Disclosure Statement. During final review of the allowed application, Applicants note that the Information Disclosure Statement of April 26, 2001 was not acknowledged.

In the Office Action dated July 26, 2002, Examiner Williams indicated that a concise explanation of the relevance of the IDS dated April 30, 2001 was not included.

Applicants enclose a copy of the postcard indicating receipt by the U.S. Patent Office of the Information Disclosure Statement dated April 26, 2001 as proof that the Japanese Office Action was filed. Applicants again enclose a copy of the Japanese Office Action dated March 6, 2001.

Application No.: 09/388,509


Docket No.: S1905.0086/P086

Applicants respectfully requests that the Information Disclosure Statement dated April 26, 2001 be acknowledged and considered for the above-referenced patent application, before payment of the issue fee.

Please charge any credits or deficiencies to our Deposit Account No. 50-2215.

Dated: May 14, 2004

Respectfully submitted,

By 

Edward A. Meilman

Registration No.: 24,735

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

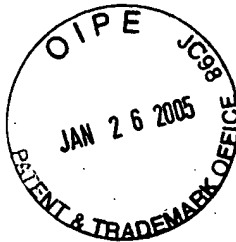
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Attorney for Applicant



Serial No. 09/388,509 Filing Date 9-2-99 OFGS File No. P/1905-86

Title ARRAY ANTENNA RECEPTION APPARATUS

First Inventor _____ Date 4-26-01

The PTO has received: _____ Last Due Date: _____

☐ Patent Application of _____
Pages (including claims & abstract)

☐ Declaration or ☐ Designation Sheet

☐ Drawings _____ Sheet(s)/Figs. _____ to _____

☐ Priority Document

☐ Small Entity Declaration

☐ Assignment & Conveyance Cover Sheet

☒ Information Disclosure Statement

☒ PTO-1449 W/3-MO. CERT.

☐ Amendment

☐ Affidavit or Declaration

☒ JP O.A. W/9 REFS W/ENGLISH ABSTRACTS

☐ Check No. _____ for \$ _____

Atty/Secy SIW/SKS

(100)

☐ TM Application ☐ ITU Basis

☐ Statement of Use

☐ Extension of Time

☐ Notice of Appeal

☐ Brief

☐ Petition

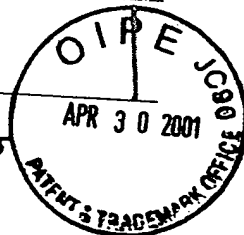
☐ Status Request

☐ Issue Fee

☒ Certificate of Mailing

☐ Express Mail No. _____

PTO STAMP



SI905.0086

Note:

(Reference should be made to the List of Cited References, Etc. for the cited references, etc.)

Claims: 1 through 9

Cited References: 1 through 7

Remarks:

An array antenna receiving device comprising a plurality of adaptive receiving parts that input receiving signals from a plurality of antenna elements, independently form a directional pattern that has a gain in the direction of the desired signal for each sector and suppress the interference signal and a demodulation signal synthesizing part that inputs the demodulation signals which are the outputs of the plurality of said adaptive receiving parts, effect weighted synthesis and output a user demodulation signal is described in Cited Reference 1.

In the technical field of array antennas that form antenna directionality for each sector, an array antenna with an arrangement of M (which is an integer of one or more) antenna elements in a straight line for each side (sector) of a polygon that has K (which is an integer of three or more) sides is described in either Cited Reference 2 or Cited Reference 3. In this case, the directional pattern is formed outside of each side of said polygon.

(It is added in this connection that, in the technical field of sector antennas that have a directional antenna on each side of a polygon, to arrange an electric wave shield on the inner side of said polygon is a means that has been used routinely.)

In the technical field of receiving equipment that receive signals from a plurality of branches, moreover, to select said demodulation signal whose desired electric power is the largest, to select said demodulation signal whose desired signal power vs. interference power ratio is the largest, and to carry out weighted synthesis (maximum ratio synthesis) in such a fashion as to obtain the largest desired signal power vs. interference power ratio (SIR) are means which are resorted to on a routine basis. In the synthesizing means as described in Cited Reference 1, to employ said customary means is something that the people in the industry could easily carry out.

In addition, the constitution of the adaptive receiving part which is described in Claim 6 of this application is described in Cited Reference 4. (According to what is described in Cited Reference 4, the complex transmission route assumed value is multiplied by the decision symbol, the output of the weighted synthesis part is deducted and the weight coefficient is controlled.)

Further, to assume the direction of arrivals from a plurality of receiving signal outputs, produce antenna weighting from said assumed result of the arrival direction and carry out weighted synthesis for forming the directional pattern on the basis of said antenna weighting is described in Cited Reference 5.

A weighted synthesis part that uses a plurality of receiving signals and a plurality of complex weighting coefficients as inputs, comprising a plurality of complex multipliers that each multiply the said

plurality of receiving signals by each of the complex weighting coefficients and an adder that synthesizes the outputs of said plurality of complex multipliers is described in Cited Reference 4 or Cited Reference 6.

Furthermore, a demodulation means comprising a transmission route assuming means that assumes the transmission route, a complex conjugate operation means that seeks the complex conjugation of the complex transmission route assumed value which is the output of said transmission route assuming means and a multiplier that multiplies the output of said complex conjugate operation means by the output of said reverse diffusion means, thereby carrying out carrier wave phase synchronization is described in Cited Reference 7 is described in Cited Reference 7.

Reason 2

This application does not meet the requirements as stipulated in Article 36, Clause 6-2 of the Law of Patents insofar as the descriptions in the Scope of Claim for Patent are concerned (refer to (1) and (2) below).

Note:

(1) There are descriptions in the invention pertaining to Claim 8 of this application: "The antenna receiving signal and said antenna weighting are inputted, M complex multipliers that multiply the receiving signal by each of M complex antenna weighting...." However, this does not clarify whether said antenna receiving signal is the signal prior to

the reverse diffusion or the signal subsequent to the reverse diffusion. (It would appear that said "antenna receiving signal" and the "receiving signal" are the "output signal of the reverse diffusion means" erroneously printed.)

In the above-mentioned descriptions, there are "antenna weighting" and "complex antenna weighting." It is not clear whether they mean the same or are different due to the lack of wording consistency.

(2) In the invention according to Claim 9 of this application, there are descriptions regarding "said demodulation means." However, no constitution about a "demodulation means" is described in Claims 1, 6 and 7 of this application. Is it not "said demodulation part" erroneously printed?

(3) The invention according to Claim 9 of this application contains descriptions to the effect that the output of said complex conjugate operation means is multiplied by the output of said reverse diffusion means. By referring to the specification and the drawings of this application, we find the output of said "complex conjugate scanning means" is multiplied by the output of the "weighting synthesis part", but not by the output of the "reverse diffusion means." Thus, said descriptions lack clarity.

("Said reverse diffusion means" in said descriptions seems to be a typographical error for "said weighting synthesis part.")

拒絶理由通知書

特許出願の番号 平成10年 特許願 第250064号
起案日 平成13年 2月27日
特許庁審査官 ▲徳▼田 賢二 9654 5J00
特許出願人代理人 京本 直樹 (外 2名) 様
適用条文 第29条第2項、第36条

この出願は、次の理由によって拒絶をすべきものである。これについて意見があれば、この通知書の発送の日から60日以内に意見書を提出して下さい。

理 由

理由1

この出願の下記の請求項に係る発明は、その出願前日本国内において頒布された下記の刊行物に記載された発明に基いて、その出願前にその発明の属する技術の分野における通常の知識を有する者が容易に発明をすることができたものであるから、特許法第29条第2項の規定により特許を受けることができない。

記 (引用文献等については引用文献等一覧参照)

- ・請求項 1乃至9
- ・引用文献 1乃至7
- ・備考

セクタ毎に複数のアンテナ素子からの受信信号を入力し希望信号の方向に利得を有する指向性パターンをセクタ毎に独立に形成し希望信号を受信し干渉信号を抑圧する複数の適応受信部と、複数の前記適応受信部の出力である各復調信号を入力し重み付け合成を行いユーザ復調信号を出力する復調信号合成部とを有するアレーアンテナ受信装置については引用文献1に記載されている。

続葉有

続 葉

そして、セクタ毎にアンテナ指向性を形成するアレーアンテナの技術分野において、 K 個 (K は3以上の整数) の辺を持つ多角形の各辺 (セクタ) に直線状に M 個 (M は1以上の整数) のアンテナ素子を配置したアレーアンテナについては引用文献2又は3に記載されており、その際の指向性パターンは、前記多角形の各辺の外側に形成されている。

(なお、多角形の各辺に指向性アンテナを備えたセクタアンテナの技術分野において、前記多角形の内側に電波遮蔽物を配置することは常套手段である。)

また、複数のブランチからの信号を受信する受信装置の技術分野において、希望信号電力が最大である前記復調信号を選択すること、希望信号電力対干渉電力比が最大である前記復調信号を選択すること、及び、希望信号電力対干渉電力比 (SIR) が最大となるように重み付け合成 (最大比合成) を行うことについては常套手段であり、引用文献1に記載の合成手段において前記常套手段を用いることは当業者が容易になし得ることである。

そして、本願請求項6に記載の適応受信部の構成については引用文献4に記載されている。(引用文献4に記載のものは複素伝送路推定値を判定シンボルに乗算し、重み付け合成部の出力を減算し、重み係数を制御している。)

そして、複数の受信信号出力から到来方向推定を行い、前記到来方向推定結果からアンテナ重みを生成し、前記アンテナ重みから指向性パターン形成のための重み付け合成を行うことについては引用文献5に記載されている。

そして、重み付け合成部として、複数の受信信号と、複数の複素重み係数とを入力とし、複数の前記受信信号に複素重み係数を各々乗算する複数の複素乗算器と、前記複数の複素乗算器の各出力を合成する加算器とを有することについては引用文献4若しくは6に記載されている。

また、復調手段として、逆拡散手段の出力信号を入力して、伝送路の推定を行う伝送路推定手段と、前記伝送路推定手段の出力である複素伝送路推定値の複素共役を求める複素共役操作手段と、前記複素共役操作手段の出力を前記逆拡散手段の出力に乗算し搬送波位相同期を行う乗算器とを有することについては引用文献7に記載されている。

理由 2

この出願は、特許請求の範囲の記載が下記 (1) 乃至 (3) の点で、特許法第36条第6項第2号に規定する要件を満たしていない。

記

(1) 本願請求項8に係る発明において「…アンテナ受信信号と、前記アンテナ

続 葉

重みとを入力とし、受信信号にM個の複素アンテナ重みを各々乗算するM個の複素乗算器…」と記載されているが、この記載からは前記「アンテナ受信信号」という記載が、逆拡散前の信号であるのか、逆拡散後の信号であるのか不明確である。(前記「アンテナ受信信号」及び「受信信号」という記載は「逆拡散手段の出力信号」の誤記かと考えられる。)

また、前記記載において「アンテナ重み」と「複素アンテナ重み」とが同一ものを示しているのか別のものを示しているのか語句が統一されておらず不明確である。

(2) 本願請求項9に係る発明において「前記復調手段は…」と記載されているが、本願請求項1、6及び7において「復調手段」なる構成は記載されておらず、前記記載は「前記復調部は…」の誤記かと思われる。

(3) 本願請求項9に係る発明において「…前記複素共役操作手段の出力を前記逆拡散手段の出力に乗算し…」と記載されているが、本願明細書及び図面の記載を参照するに、前記「複素共役走査手段」の出力は、「重み付け合成部」の出力に乗算されており、「逆拡散手段」の出力には乗算されていないことから前記記載が不明確である。(前記記載における「前記逆拡散手段」という記載は「前記重み付け合成部」の誤記かと思われる。)

拒絶の理由が新たに発見された場合には拒絶の理由が通知される。

なお、意見書及び補正書を提出される際は、上記理由1に記載した各引用文献との構成及び動作の差異、及び、そのことにより本願発明が得る効果を意見書等において明確に記載されたい。

引用文献等一覧

1. 特開平10-173580号公報
2. 特開平10-174160号公報
3. 特開平8-32347号公報
4. 国際公開第97/20400号パンフレット(1997)
5. 特開平5-041607号公報
6. 特開平10-126138号公報
7. 特開平07-231286号公報

*Cited references
(Relevant)*

続 葉

先行技術文献調査結果の記録

・調査した技術分野 IPC第7版

H01Q 3/00 - 3/46

H01Q21/00 - 25/04

H04B 7/00

H04B 7/02 - 7/12

H04L 1/02 - 1/06

・先行技術文献

- | | |
|--------------------|--|
| 8. 特開平11-298388号公報 | } <i>Related art references</i>
<i>(Not relevant)</i> |
| 9. 特開平11-298345号公報 | |

この先行技術文献調査結果の記録は、拒絶理由を構成するものではない。

この拒絶理由通知の内容に関するお問い合わせ、または面接のご希望がございましたら下記までご連絡下さい。

特許審査第四部 伝送システム 徳田賢二

TEL. 03(3581)1101 内線3536 FAX. 03(3501)0699